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Hayes

Applicant: Harris, George      Examiner: Harris, W.G.  
Serial No: 09/871,839      Art Unit: 2817  
File Date: 06/01/2001  
Invention: APPARATUS AND METHOD FOR IN-PROCESS HIGH POWER  
VARIABLE POWER DIVISION



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COMMISSIONER OF PATENTS  
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#### DECLARATION

Dear Commissioner:

My name is George Harris.

I reside at 59 Musket Drive, Auburn, Maine, 04210.

I am employed by RF Technologies Corporation doing business at 12 Foss Road, Lewiston, Maine, 04240.

I am the inventor of the invention entitled Apparatus and Method for In-Process High Power Variable Power Division of application U.S. Serial Number 09/871,839 filed June 1, 2001.

I was educated at the University of Maine, Orono, Maine with degrees in Engineering Physics.

Since my graduation from school, I have been Registered as a Professional Engineer in the state of Maine. I have been working in the

special field of RF and Microwave Engineering since graduating from the University in 1979.

I have read and am familiar with Zimmerman U.S. Patent 5,656,980 cited in the July 31, 2002 office action for the above entitled application.

The Zimmerman patent relates to a filter which is utilized between an antenna and plural RF receivers.

This device works by changing the impedance in the Filter as a function of frequency.

This filter is designed to take a group of signals from a an antenna and distribute them according to an attribute of their frequencies to various receivers. This has the effect of tuning the feed between the filter and the receiver to a particular frequency, which frequency has been previously established by the fixed posts or vanes inferior of the waveguide. This also has the effect of varying the impedance of the load presented to the antenna so as to provide for a filtered output.

This antenna to receiver application and frequency tuning intended use are different than a power divider.

In a power divider there is high power heating from the microwave generator to load.

The Zimmerman reference can not be utilized in a high power electromagnetic system.

The reasons for this include the fact that Zimmerman is a filter which operates at very low power levels and at up to several different frequencies. The Zimmerman device operates at low power levels commonly used with receivers, by changing the impedance as a function of frequency from the antenna to the receivers, so as to distribute different signals on frequencies to receivers tuned to those frequencies. The Zimmerman device works at low power levels such as those used with receivers, and would be destroyed if used in a high power electromagnetic system such as the claimed invention is intended for.

The claimed invention in the present application accomplishes no substantial filtering function, and does not distribute signals from the input to the outputs according to different frequencies as with the Zimmerman device. The claimed invention in the present application instead continuously alters power division ratios, under high power, at a single frequency without filtering, from a single frequency high energy input electromagnetic signal, to provide multiple outputs having the same frequency and continuously variable single-frequency power division ratios.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on the information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fines and/or imprisonment, or both under Section 101 of Title 18 of the U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date

01/31/03

  
George Harris